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Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation

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Item 4 (b) of the provisional agenda

Standardization of technical and safety requirements in inland navigation: Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels (resolution No. 61, revision 2)

Amendment proposal to the annex to resolution No. 61, revision 2, based on the European Standard laying down technical requirements for inland navigation vessels, edition 2021

Note by the secretariat*,**

Mandate

1. This document is submitted in line with the Proposed Programme Budget for 2021, part V, Regional cooperation for development, section 20, Economic Development in Europe. Programme 17, Economic Development in Europe (A/75/6 (Sect.20), para. 20.51).
2. At its fifty-eighth session, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation requested the secretariat to prepare an amendment proposal to the annex to resolution No. 61 based on ECE/TRANS/SC.3/WP.3/2021/7 with a view of harmonizing the annex with the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN) edition 2021 (ECE/TRANS/SC.3/WP.3/116, para. 55).
3. The annex to this document contains the amendment proposals to the annex to resolution No. 61, based on ECE/TRANS/SC.3/WP.3/2021/7 and other relevant provisions of ES-TRIN. The Working Party may wish to consider them and provide further guidance to the secretariat.

* The present document was submitted after the deadline in order to reflect the most recent information.
** The present document is being issued without formal editing.

Annex

Amendment proposals to the annex to resolution No. 61, revision 2

I. Chapter 4 “Safety clearance, freeboard and draught marks”

1. Section 4-3, *modify*

4-3 DRAUGHT MARKS AND FREEBOARD MARK

4-3.1 The plane of maximum draught shall be determined in such a way that the specifications concerning minimum freeboard and minimum safety clearance **and the vessel’s maximum design draught** are ~~both~~ **all** met. However, for safety reasons, the competent authority may lay down a greater value for the safety clearance or freeboard. The plane of maximum draught shall be determined at least for zone 3.

4-3.2 The plane of maximum draught shall be indicated by means of highly visible, indelible draught marks.

4-3.34 Draught marks are to be designed as follows:

(a) **The topmost draught mark points towards the stern and is a rectangle 300 mm long and 30 mm high** ~~The draught marks for zone 3 shall consist of a rectangle 300 mm long and 40 mm deep, the baseline of which is horizontal and coincides with the plane of the maximum authorized draught. Any differing draught marks shall include such a rectangle. If the topmost draught mark is the one applicable to zone 3, it is 40 mm high.~~

(b) **The additional draught marks to be added point towards the bow and the following provisions apply:**

(i) Draught marks for zone 3 ~~shall consist of~~ **comprise** a rectangle 300 mm long and 40 mm high;

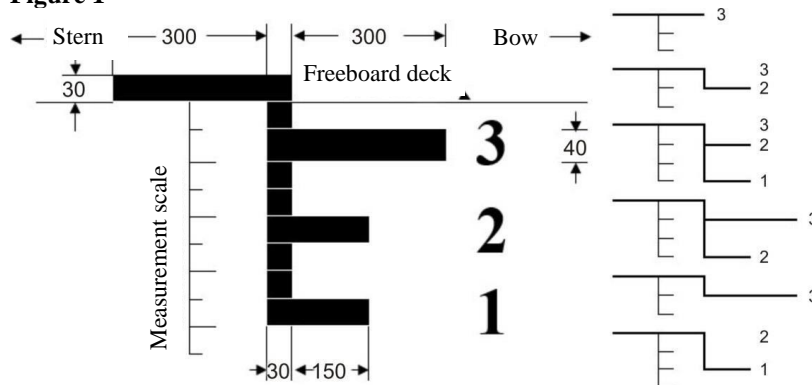
(ii) Draught marks for zones 1 and 2 **comprise** a rectangle 150 mm long and 30 mm high, the baseline of which is horizontal and coincides with the plane of the maximal authorized draught.

(c) **If the draught mark to be added for zone 3 or 4 coincides with the uppermost draught mark, the latter can be dispensed with.**

4-3.4 The number of the zone, in characters 60 mm high × 40 mm deep, is to be added next to the draught marks towards the bow;¹ in the case of zone 4, the number can be dispensed with.

4-3.5 The draught marks according to paragraphs 4-3.3 and 4-3.4 and their orientation are to be in accordance with figure 1.

Figure 1



¹ Para. 4-3.7, second indent.

4-3.36 Vessels shall have at least three pairs of draught marks, of which one pair shall be centrally located and the two others located, respectively, at a distance from the bow and stern that is equal to roughly one-sixth of the length.

4-3.57 Marks or indications which cease to be valid following a further inspection shall be deleted or marked as being no longer valid under the supervision of the Administration. **Illegible** draught marks may only be replaced under the supervision of the Administration.

4-3.68 Where a vessel has been measured in implementation of the 1966 Convention on the Measurement of Inland Navigation Vessels and **the measurement mark is at the same height as the uppermost of the draught marks prescribed in paragraph 4-3.4** the plane of the measurement marks meets the requirements of this resolution, ~~those~~ **this** measurement marks shall take the place of the draught marks **for this zone**; this shall be mentioned in the Ship's certificate.

4-3.9² However, By way of derogation from paragraph 4-3.3:

(a) Where a vessel is less than 40 m in length *L* it will suffice to affix two pairs of draught marks at a distance from the bow and stern, respectively, that is equal to approximately a quarter of the length *L*;

(b) Where vessels are not intended for the carriage of goods, a pair of draught marks located roughly halfway along the vessel will suffice.

~~4-3.7 For vessels operating on zones of inland waterways other than zone 3 (zones 1, 2 or 4) the bow and stern pairs of draught marks provided for in 4.3.3 shall be supplemented by adding a vertical line to which one or, in the case of several zones, several additional draught lines 150 mm long shall be affixed towards the bow, in relation to the draught mark for zone 3.~~

~~This vertical line and the horizontal line shall be 30 mm thick. In addition to the draught mark towards the bow of the vessel, the relevant zone numbers shall be indicated in lettering 60 mm high × 40 mm deep (see figure 4-3.7).~~

~~The lower edge of each draught line shall correspond to the plane of maximum authorised draught for the navigation zone concerned.~~

4-3.10 If the plane of maximum draught of a vessel for one or more zones has been determined by assuming that the holds may be closed in such a way as to make them spray-proof and weathertight, and if the distance between the plane of maximum draught and the upper edge of the coamings is less than the permissible safety clearance for the zone in question, the maximum draught for sailing with uncovered holds shall be determined.

The following statement shall be entered on the ship's certificate:

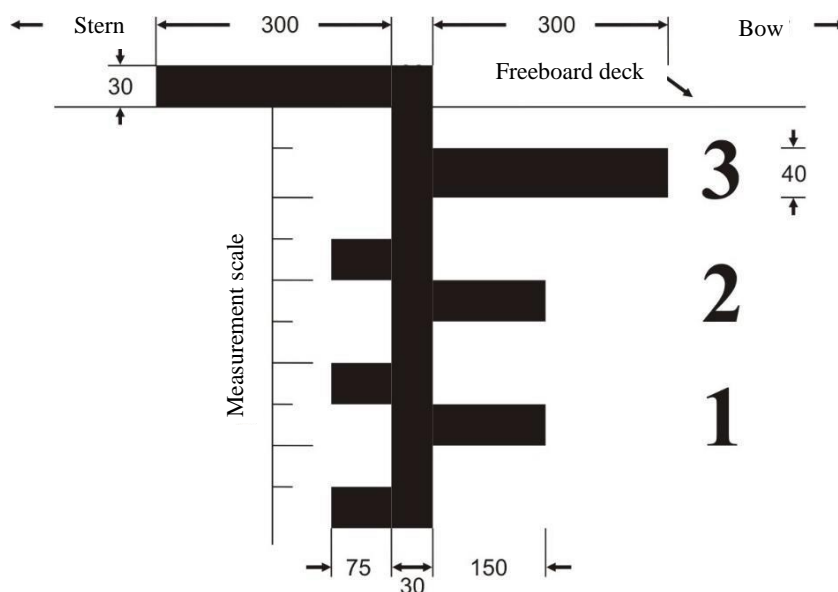
“Where the hold hatches are totally or partly uncovered the vessel may only be loaded up to ... mm below the draught marks for zone”

4-3.11 In the case of vessels with open holds, in addition to the provisions of paragraph 4-3.6 the draught marks for the relevant zones are to be supplemented by a rectangle 75 mm long by 30 mm high, pointing aft, the base of which is horizontal and coinciding with the level of the maximum permissible draught for navigation in the zone in question with open holds.

4-3.12 The draught marks according to paragraph 4-3.11 and their orientation are to be in accordance with figure 2.

² Para. 4-3.3, second sentence.

Figure 2



4-3A DRAUGHT SCALES, DECK LINE AND FREEBOARD MARK

4-3A.1 Vessels whose draught may exceed 1 m shall bear a draught scale on each of their sides towards the stern; they may bear additional draught scales.

4-3A.2 The zero points on each draught scale shall be taken vertically to this within the plane running parallel to the plane of maximum draught passing through the lowest point of the hull or of the keel where such exists. The vertical distance above the zero point shall be graduated in decimetres. That graduation shall be located on each scale, from the unladen water line up to 100 mm above the maximum draught by means of punched or chiselled marks, and shall be painted in the form of a highly-visible band in two alternating colours. That graduation shall be identified by figures at a distance of every five decimetres marked next to the scale as well as at the top of the scale.

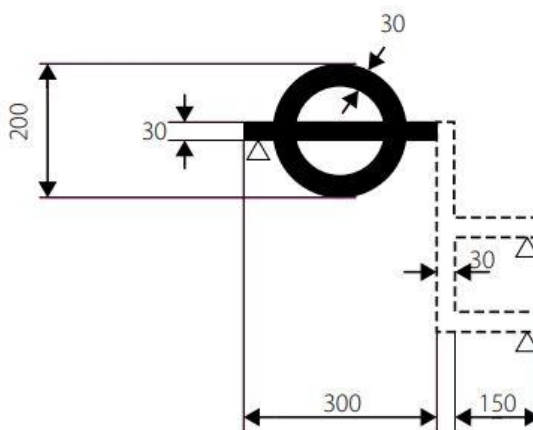
4-3A.3 The two stern measurement scales affixed pursuant to the 1966 Convention on the Measurement of Inland Navigation Vessels may replace the draught scales, provided that they include a graduation that meets the requirements plus, where appropriate, figures indicating the draught.

4-3A.4 4-3.8 The centrally located measurement/draught scale for zones 1 and 2 may be replaced by a freeboard mark.

The freeboard mark consists of a ring intersected through its centre by a horizontal line which shall be supplemented if necessary by additional freeboard lines.

The width of the ring and of all the other lines of the freeboard mark shall be 30 mm; the outer diameter of the ring shall be 200 mm; the length of the horizontal line intersecting the ring shall be 300 mm; and the size of the numerals designating the zones shall be 60 x 40 mm (figure 4-3.8 3).

Figure 4-3.8 3
Freeboard mark



The centre of the ring shall be placed amidships. The lower edge of the horizontal line which intersects the ring shall pass through the centre of the ring and shall constitute the freeboard line.

If the vessel is intended to navigate in several navigation zones, a vertical line and additional freeboard lines 150 mm in length shall be applied forward of the centre of the ring.

4-3A.5 4-3.9 Deck line and freeboard mark

When the centrally located measurement/draught scale has been replaced by a freeboard mark, the deck line must be indicated by the upper edge of a horizontal rectangle 300 mm long and 25 mm wide. This rectangle shall be marked amidships on each side of the hull, and its upper edge shall normally pass through the point where the continuation outwards of the upper surface of the freeboard deck intersects the outer surface of the shell amidships. However, the deck line may also be marked at a different height provided that the freeboard is corrected accordingly. The distance between the upper edge of the deck line and the freeboard mark constitutes the freeboard as mentioned in section 4-4.1.

2. Section 4-4:
 - (a) *Add* a new paragraph 4-4.1.5

4-4.1.5 For vessels intended to operate in zones 1 and 2, the Administration may take into account salinity when calculating freeboard.
 - (b) *Renumber* figure 4-3.9 as figure 3.
 - (c) *Add* a new paragraph 4-4.2.8

4-4.2.8 However, for safety reasons, the Administration may lay down a greater value for the freeboard.
3. Section 4-5:
 - (a) Paragraph 4-5.3, *modify*

4-5.3 For open vessels navigating in zone 3, the safety clearance shall be increased in such a way that **each of** openings that cannot be closed by spray-proof and weathertight devices shall be at least 500 mm from the plane of maximum draught.
4. Section 4-8, *delete*.

II. Chapter 8 “Engine design”

5. Add a new section 8-3

8-3 NOISE EMITTED BY VESSELS

8-3.1 The noise produced by a vessel under way, and in particular the engine air intake and exhaust noises, shall be damped by using appropriate means.

8-3.2 The sound pressure level of the noise generated by a vessel under way shall not exceed 70 dB(A) at a lateral distance of 25 m from the ship's side.

8-3.3 Apart from transshipment operations, the sound pressure level of the noise generated by a stationary vessel shall not exceed 60 dB(A) at a lateral distance of 25 m from the ship's side.

III. Chapter 9 “Electrical installations”

6. Section 9-2.6, *modify*

9-2.6 BATTERIES, ACCUMULATORS AND THEIR CHARGING DEVICES

9-2.6.1 The accumulators shall be of a construction suitable for use on board a vessel. They shall be grouped in boxes or trays fitted with grips to facilitate handling. Cell boxes shall be made of a shock-resistant material that does not easily catch fire and shall be so made as to prevent any spillage of electrolyte at an inclination of 40° from the vertical.

9-2.6.2 Accumulators shall be so arranged as not to shift with the movements of the vessel. They shall not be exposed to excessive heat, extreme cold, spray, steam or vapour. Accumulator batteries shall be installed so as to permit easy access for replacement, topping up and cleaning of the elements, with a space of not less than 15 mm all around them to allow air to circulate, and with no more than 1.5 m separating the deck from the plugs in the uppermost bank. If accumulators are installed on two or more shelves one above the other, at least 50 mm space shall be left at the front and back of each shelf to allow air to circulate.

Accumulator batteries shall not be installed in the wheelhouse, accommodation or holds.

This requirement shall not apply to accumulators for portable appliances, or to accumulators requiring a charging power of less than 0.2 kW.

9-2.6.3 Accumulator batteries requiring a charging power of more than 2.0 kW (calculated from the maximum charging current and the nominal voltage of the battery, **taking into account the characteristic charging curves of the charging device**) shall be installed in a special battery room. If placed on deck, they shall be enclosed in a cupboard or chest. **If gas can escape from accumulators, this room or cupboard must be mechanically ventilated to the open deck (supply and exhaust air).**

Accumulator batteries requiring a charging power not exceeding 2.0 kW may be installed below decks in a cupboard or chest. They may **also** be installed **without casing in an engine room, electrical service room** ~~in the machinery space~~ or any other well-ventilated place provided that they are protected against falling objects and dripping water.

Special battery rooms shall be capable of being heated when the temperature inside them falls below 5°C.

9-2.6.4 The interior surfaces of all battery rooms, including cupboards, lockers, shelving and other built-in fixtures, shall be protected against action of the electrolyte by a coat of paint or a lining made of a material resistant to the electrolyte.

9-2.6.5 Provision shall be made for effective ventilation when batteries are installed in a closed compartment, cupboard or chest. Forced-draught ventilation shall be provided for nickel-cadmium accumulators requiring a charging power of more than 2.0 kW and for lead-acid accumulators requiring more than 3.0 kW.

The air shall enter at the bottom and be discharged at the top so that the whole of the battery is swept by the air stream. Ventilation ducts shall not include devices which obstruct the air flow.

The minimum air throughput for ventilation, [m³/h], shall be calculated by the following formula:

$$Q = 0.11f \times I \times n \quad [\text{m}^3/\text{h}]$$

where:

$f = 0.11$ for accumulators with liquid electrolytes;

$f = 0.03$ for accumulators with enclosed cells (electrolyte immobilised in gel, non-woven fibrous material);

I – the maximum charging current (it shall be not less than one quarter of the maximum current admissible by the charging device), [A];

n – the number of cells **in series circuit.**

In the case of buffer accumulators of the onboard network, other methods of calculation taking into account the characteristic charging curve of the charging devices may be accepted by the Administration, provided that these methods are based on the provisions of recognised classification societies or on relevant standards.

9-2.6.6 Where natural ventilation is used, the cross-section of the ducts shall be sufficient for the required air throughput at an air-flow velocity of 0.5 m/s It shall be not less than 80 cm² for lead batteries and not less than 120 cm² for alkaline batteries.

9-2.6.7 Where the required ventilation cannot be obtained by natural air flow, an exhaust fan shall be provided; its motor shall be clear of the gas stream.

Special devices shall be provided to prevent gases from entering the motor.

Fans shall be of a construction and material precluding the production of sparks through contact between a blade and the fan casing. In addition, the material shall be such as to dissipate any electrostatic charges. Warning symbols “No naked lights or fires and no smoking” corresponding to sketch 2 of appendix 3 with a diameter of at least 10 cm shall be placed on the doors of rooms or cupboards, or the covers of chests, containing batteries.

9-2.6.8 Charging devices must basically be designed so that discharged accumulators can be recharged within a maximum of 15 hours to 80 % of their nominal capacity, without exceeding the amperage of maximum permissible charge rate.

9-2.6.9 Only automatic charging devices which correspond to the charging characteristics of the accumulator type must be used.

9-2.6.10 For the simultaneous supply of consumer equipment while charging, the power requirements of the consumer equipment must be taken into account when selecting the charger. A charging voltage of up to a maximum of 120 % of the rated voltage must be observed irrespective of the current power requirements. The figure increases to 125 % for traction batteries.

9-2.6.11 [The requirements of European Standard EN 62619:2017 and EN 62620:2015 shall apply for lithium-ion accumulators.]

9-2.6.12 Accumulator management systems for monitoring the accumulators are to be used if possible. Lithium-ion accumulators must be equipped with such systems.

These systems shall at a minimum comprise the following functionality:

- (a) Cell protection (short-circuit, external, internal, overcurrent, deep discharge, etc.);
- (b) Charge control, provided this is not by means of the charger;
- (c) Load management;
- (d) Determination of the charge level;
- (e) Balancing of the cells;
- (f) Thermal management.

Depending on use, if possible, they should also feature the following functionality:

- (g) Determination of ageing, remaining capacity, internal resistance etc.;
- (h) Communication (e.g. with inverters and control devices);
- (i) Authentication and identification;
- (j) History.

9-2.6.13 Rooms in which lithium-ion accumulators are stored shall comply with the following requirements:

- a) These rooms shall be protected against fire of one or several lithium-ion accumulators on the basis of a fire protection concept developed by an expert
 - (i) Having regard to the other equipment located in the same room,
 - (ii) Having regard to instructions of the manufacturer of the lithium-ion accumulators,
 - (iii) Including provisions for alarm systems.

A fire protection concept may be dispensed with if the lithium-ion accumulators are stored in a fireproof enclosure, which is equipped

- (iv) With at least one monitoring device (fire and thermal runaway) and
 - (v) [By derogation from article 13.06,] with one suitable fixed fire-extinguishing installation for protecting objects.
- (b) In the case referred to in (a) first sentence, these rooms shall be shielded with A60 partitions.
 - (c) These rooms or the lithium-ion accumulators housed in a fireproof enclosure shall be mechanically ventilated to the open deck. The exhaust outlet of the ventilation shall be located in such a way that the safety of persons on board is not endangered.

These requirements do not apply if the cumulative capacity of the lithium-ion accumulators in the room is below 20 kWh.

9-2.6.14 The requirements of paragraphs 9-2.6.12 and 9-2.6.13 do not apply to accumulators with a charging power of less than 0.2 kW.

9-2.6.15 For batteries, paragraphs 9-2.6.1 to 9-2.6.8 and 9-2.6.12 shall apply *mutatis mutandis*.

IV. Chapter 10 “Equipment”

7. Section 10-3, *modify*

10-3 FIRE-FIGHTING APPLIANCES

A. Portable fire extinguishers

10-3.1 There shall be at least **one portable fire extinguisher [in accordance with the European Standards EN 3-7:2007 and EN 3-8:2007] at each of the following places:**

- (i) In the wheelhouse:—~~1 portable fire extinguisher;~~
- (ii) Close to each means of access from the deck to the accommodation:—~~1 portable fire extinguisher;~~
- (iii) Close to each means of access to service premises that are not accessible from the accommodation, and which contain heating, cooking or refrigerating equipment using solid or liquid fuels or liquefied gas:—~~1 portable fire extinguisher;~~
- (iv) At each entrance to the engine room and boiler rooms:—~~1 portable fire extinguisher;~~
- (v) At suitable points below deck in engine rooms and boiler rooms such that no position in the space is more than 10 metres walking distance away from an extinguisher:—~~1 portable fire extinguisher.~~

10-3.2 For the portable fire extinguishers required by paragraph 10-3.1, only powder type extinguishers with a content of at least 6 kg or other portable extinguishers with the same extinguishing capacity may be used. They shall be suitable for Class A, B and C fires.

By way of derogation on vessels with no liquefied gas installations, spray foam fire extinguishers using aqueous film-forming foam (AFFF) frost proof to -20°C are permissible even if they are unsuitable for Class C fires. These fire extinguishers shall have a minimum capacity of 9 litres.

In rooms where fires involving vegetable or animal oils and fats are likely to occur the Administration may require one or more portable fire extinguishers suitable for extinguishing Class F fires. Such portable fire extinguishers shall be entered in item 52 of the ship’s certificate.

All extinguishers shall be suitable to extinguish fires in electrical systems of up to 1000 V.

10-3.3 In addition, powder, water or spray foam fire extinguishers may be used which are suitable at least for the class of fire most likely to occur in the room for which they are intended.

~~10-3.43~~ The extinguishing substance may neither be halon nor contain a product which is likely to release toxic gases, such as carbon tetrachloride during use. Portable fire extinguishers using CO₂ may only be used to fight fires at specific locations such as electrical installations, kitchens; the quantity of CO₂ shall ~~not constitute a health hazard~~ **be no more than 1 kg per 15 m³ of the room in which they are made available for use.**

10-3.54 Extinguishers sensitive to frost or heat shall be installed or protected in such a manner that they are always ready for use.

~~10-3.62~~ The extinguishers shall be suitable for their purpose and shall meet the requirements of the Administration or recognized Classification Society. They shall be inspected and checked at least once every two years. A certificate to that effect, signed by the firm or person that carried out the inspection, shall be kept on board.

~~10-3.75~~ If the **portable fire extinguishers** ~~fire-fighting appliances~~ are so installed as to be concealed from view, the plates or doors concealing them shall bear a symbol

corresponding to ~~relevant sketches~~ **sketch 3** of appendix 3 with a side length of at least 10 cm.

V. Chapter 12 “Crew Accommodation”

8. Paragraph 12-3.1, *modify*

12-3.1 Doors:

(a) Shall have a total height, coamings included, of at least 1.90 m and a clear width of at least 0.60 m. The prescribed height may be achieved by means of sliding or hinged covers or flaps;

(b) ~~It~~ Shall be **capable of being opened outwards** ~~possible to open doors~~ from either side;

(c) **Which are located along escape routes shall not hinder the evacuation of persons when they are opened;**

(d) **Which are locked from the inside shall be capable of being opened from the outside in an emergency.**

Coamings shall be not more than 0.40 m high, but shall nonetheless comply with the provisions of other safety regulations.

VI. Appendix 10 “Supplementary provisions applicable to craft operating on fuels with a flashpoint equal to or lower than 55°C”*

9. Section 2.8 “LNG bunkering system”:

(a) Paragraph 2.8.6, *modify*

2.8.6 The bunkering manifold shall be designed to withstand normal mechanical loads during bunkering. The connections shall be of dry-disconnect type ~~in accordance with international standard ISO 16904, and~~ equipped with appropriate additional safety dry break-away couplings.

(b) *Add* a new paragraph 2.8.9

2.8.9 All the components of the bunkering system shall be in accordance with [European Standard EN 20519:2017] [ISO 20519:2017] (5.3 to 5.7).

* ECE/TRANS/SC.3/172/Rev.2/Amend.1.